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LETTER

New data about sexually transmitted COVID-19

Dear Editor,

The growing body of literature regarding the coronavirus disease 2019 (COVID-19) pandemic has led to interesting developments elucidating the nature of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) transmission. With regards to viral shedding in genital secretions, current data point to the fact that genital secretions remain clear of the virus and represent an unlikely route of infection. A recent study conducted by Wu et al on COVID-19-infected pregnant woman attempted to assess the risk of vertical transmission by collecting and testing vaginal secretions for the presence of SARS-CoV-2 in which all 13 patients had no evidence of viral shedding.[1] This seems to be confirmed by Yan et al on a larger series of pregnant women infected with SARS-CoV-2 who again could not find signs of viral presence within the female genital fluids they tested.[2] Both studies must be interpreted cautiously as they exclusively used the genital secretions of pregnant women which are generally more abundant and potentially more dilute. Angiotensin-converting enzyme 2 (ACE-2) receptor is currently accepted to be the main host cell entry receptor target for the SARS-CoV-2, and its presence on Leydig cells in male patients has raised concern over the possibility of viral orchitis and viral shedding through seminal fluid. However, current data suggest that no viral RNA is present in the seminal fluid of SARS-CoV-2-positive males. This can be explained by either the viral load, or the concentration of ACE-2 receptors being too low at the level of the testes.[3] In our own recent publication, we too comment on the potential for sexual transmission via alternative forms of sexual contact, such as anal-oral contact. This currently seems like a plausible mechanism as viral shedding may indeed continue in the gastrointestinal tract for a period of time beyond that which can be proven through nasopharyngeal swab testing.[4] We also propose that close contact between partners might be a risk for viral transmission as the lipid envelope that encapsulates the coronavirus could allow it to be stable in areas with high sebum production such as on the hair of the scalp, eyelashes, ears, or beard. It is also possible that arthropods found on human skin, such as *Demodex folliculorum*, may increase viral stability through molecular attraction forces between the exoskeletal chitin polymer and the lipid envelope of the SARS-CoV-2. Wydro et al was able to demonstrate that molecular interactions do exist between chitosan and fatty acids by creating a series of Langmuir films with a buffer containing various concentrations of chitosan in which lipid deposition was dependent on the concentration of chitosan in the buffer solution.[4] Such lipid interactions are critical in viral transmission as evidenced by the ability of small molecules to interrupt viral attachment to host cells.[5] As such, we recommend strict hygiene measures be adhered to, especially in people who share close quarters.[6,7] The presence of a viral rash on patients is an especially interesting subject. Recent reports have been made of a vesicular coronavirus rash, and it is still unclear whether such rashes contain viral particles within the vesicular fluid. To date, real-time polymerase chain reaction assays from the vesicular fluid of suspected SARS-CoV-2 vesicles have been unable to demonstrate viral RNA, but current data are limited to only four patients and the study notes a lack of assay standardization and a low viral load as possible sources of error.[8] If such affirmations turn out to be true, this too could potentially be a source of viral contamination between sexual partners.[9] Bearing this in mind, we recommend that patients who present with a possible viral exanthem related to the SARS-CoV-2 refrain from close contact with others, and in such circumstances the recommendation of sexual abstinence would be appropriate.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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